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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/582,837	03/11/2008	Ronald C. Lilley	US03 0503 US2	5956
24737 7590 10/04/2010 PHILIPS INTELLECTUAL PROPERTY & STANDARDS P.O. BOX 3001 BRIARCLIFF MANOR, NY 10510				
EXAMINER NEWTON, STEPHANIE R				
ART UNIT		PAPER NUMBER		
3727				
MAIL DATE		DELIVERY MODE		
10/04/2010		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/582,837

**Applicant(s)**

LILLEY ET AL.

**Examiner**

STEPHANIE NEWTON

**Art Unit**

3727

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 March 2008.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-13 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 14 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO/SI.08)  
4) ☐ Interview Summary (PTO-413)  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_  
Paper No(s)/Mail Date 6/14/2006

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 recites the limitation "the center frequency" in the second paragraph, second line. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(e) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. **Claims 1-9** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Grez et al. (US 6,918,300)** in view of **Woog et al (US 2002/0156402)**.

**Regarding claim 1**, Grez et al. disclose a system for resonantly driving a power toothbrush having a resonant frequency, wherein a brush head portion of the toothbrush moves in operation through a path with an amplitude about a center point, comprising a resonant drive system for driving a brush head (**22, Fig. 1**) at a drive frequency, the drive system including a circuit (**14, Fig. 1 see also col. 3, lines 52-61**) for changing the drive frequency relative to the center frequency to produce a periodic change of amplitude of the brush head portion (**col.4 ,lines 50-60**), but fails to disclose the change of the amplitude being within the range of 5- 30%

However, Woog et al. disclose wherein the change in amplitude is within 30% in order to prevent discomfort or traumatism.

Therefore, it would have been obvious to one of ordinary skill in the art during the time the invention was made to include wherein the change in amplitude of Grez et al. is within the range of 5-30% based on the aforementioned teachings of Woog et al. since determining the amplitude range providing the best comfort of use is well known in the art.

**Regarding claim 2**, Grez et al. fail to disclose wherein the change of amplitude is less than 20%; however, Woog et al. disclose wherein the change in amplitude is within plus/minus 30% in order to prevent discomfort or traumatism.

Therefore, it would have been obvious to one of ordinary skill in the art during the time the invention was made to include wherein the change in amplitude of Grez et al. is less than 20% based on the aforementioned teachings of Woog et al. since determining the amplitude range providing the best comfort of use is well known in the art.

**Regarding claim 3**, by applicants' own admission, it would have been obvious to one of ordinary skill in the art during the time the invention was made to disclose wherein the center frequency is different from the resonant frequency of the toothbrush within a range of 0 to 5 Hz (page 2, line 18-22).

**Regarding claim 4**, Grez et al., as modified by Woog et al., disclose wherein the changing of the drive frequency is accomplished by frequency modulation (col. 3, lines 52-61).

**Regarding claim 5**, by applicants' own admission, it would have been obvious to one of ordinary skill in the art during the time the invention was made to disclose wherein the center frequency is different from the resonant frequency of the toothbrush within approximately plus/minus 3 Hz (page 2, line 18-22).

**Regarding claim 6**, by applicants' own admission, it would have been obvious to one of ordinary skill in the art during the time the invention was made to disclose wherein the driving frequency has a frequency deviation from the center frequency (page 5, lines 28-30); however, the specification of the current invention is silent as to whether it is well-known to disclose the driving frequency having a frequency deviation with a range of 1-14 Hz from the center frequency.

It would have been obvious to one of ordinary skill in the art to disclose the driving frequency having a frequency deviation with a range of 1-14 Hz from the center frequency, since where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. **In re Aller, 105 USPQ 233.** Applicant fails to disclose the criticality of the driving frequency having a frequency deviation with a range of 1-14 Hz from the center frequency.

**Regarding claim 7**, by applicants' own admission, it would have been obvious to one of ordinary skill in the art during the time the invention was made to disclose wherein the driving frequency has a frequency deviation from the center frequency (**page 5, lines 28-30**); however, the specification of the current invention is silent as to whether it is well-known to disclose wherein the frequency deviation is approximately 3.5 Hz.

it would have been obvious to one of ordinary skill in the art to disclose wherein the frequency deviation is approximately 3.5 Hz since discovering an optimum value of a result effective variable involves only routine skill in the art. **In re Boesch, 617 F.2d 272, 202 USPQ 215 (CCPA 1980)**. Applicant fails to disclose the criticality of a frequency deviation being approximately 3.5 Hz.

**Regarding claim 8**, Grez et al., as modified by Woog et al., fails to disclose wherein the driving frequency change has a modulation frequency within the range of 3-40 Hz; however it would have been obvious to one of ordinary skill in the art to disclose wherein the driving frequency change has a modulation frequency within the range of 3-40 Hz, since where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. **In re Aller, 105 USPQ 233**. Applicant fails to disclose the criticality of a modulation frequency within the range of 3-40 Hz.

**Regarding claim 9**, Grez et al., as modified by Woog et al., fails to disclose wherein the driving frequency change has a modulation frequency is approximately 12 Hz; however, it would have been obvious to one of ordinary skill in the art to disclose wherein the driving frequency change has a modulation frequency is approximately 12 Hz since discovering an optimum value

of a result effective variable involves only routine skill in the art. **In re Boesch**, 617 F.2d 272, 202 USPQ 215 (CCPA 1980). Applicant fails to disclose the criticality of a modulation frequency is approximately 12 Hz.

6. **Claims 10 & 11** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Grezt et al.** (US 6,918,300) in view of **Woog et al.** (US 2002/0156402) and further views of **Kushida et al.** (US 6,664,748).

**Regarding claim 10**, Grezt et al., as modified by Woog et al., fail to disclose wherein the change of the drive frequency is in the form of a triangular wave; however Kushida et al. disclose wherein the change of the drive frequency is in the form of a triangular wave (**Fig. 8 see also col. 8, lines 53-67 and col. 9, lines 1-5**).

Therefore, it would have been obvious to one of ordinary skill in the art during the time the invention was made to modify the waveform of the change of drive frequency of Grezt et al., as modified by Woog et al., based on the aforementioned teachings of Kushida et al. since doing so is well known in the art.

**Regarding claim 11**, Grezt et al., as modified by Woog et al., fail to disclose wherein the change of drive frequency has a duty factor of approximately 48%; however, Kushida et al. disclose wherein the change of drive frequency has a duty factor (**col. 7, lines 10-15**).

Therefore, it would have been obvious to one of ordinary skill in the art during the time the invention was made to include a duty factor with the change of drive frequency of Grezt et al., as modified by Woog et al., based on the aforementioned teachings of Kushida et al. since doing so provides a means of operating the waveform of the drive frequency.

Greze et al., as modified by Woog et al. and Kushida et al., fail to disclose wherein the duty factor is approximately 48%.

However, it would have been obvious to one of ordinary skill in the art during the time the invention was made to disclose wherein the duty factor is approximately 48%, since discovering an optimum value of a result effective variable involves only routine skill in the art. **In re Boesch, 617 F.2d 272, 202 USPQ 215 (CCPA 1980).** Applicant fails to disclose the criticality of a duty factor of approximately 48%.

7. **Claims 12 & 13** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Greze et al. (US 6,918,300)** in view of **Woog et al. (US 2002/0156402)** and further views of **Giuliani et al. (US 5,189,751)**.

**Regarding claim 12,** Greze et al., as modified by Woog et al., fail to disclose wherein the drive system includes two driving signal sources, one signal source being at approximately the resonant frequency and the other signal source being at a frequency which is slightly different than the resonant frequency.

However, Giuliani et al. disclose one signal source being at approximately the resonant frequency and the other signal source being at a frequency which is slightly different than the resonant frequency (**col. 4, lines 36-57**).

Therefore, it would have been obvious to one of ordinary skill in the art during the time the invention was made to modify the drive system of Greze et al., as modified by Woog et al., based on the aforementioned teachings of Giuliani et al. providing an alternate drive system for achieving higher amplitude without imparting discomfort to the user.



**Regarding claim 13**, Grez et al., as modified by Woog et al. and Giuliani et al., fail to disclose wherein the frequency of the second signal source is different than the frequency of the first source within a range of 5 to 30 Hz.

However, it would have been obvious to one of ordinary skill in the art to disclose wherein the frequency of the second signal source is different than the frequency of the first source within a range of 5 to 30 Hz, since where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. **In re Aller, 105 USPQ 233**. Applicant fails to disclose the criticality of the frequency of the second signal source being different than the frequency of the first source within a range of 5 to 30 Hz.

### *Conclusion*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following references are cited for disclosing related limitations of the applicant's claimed and disclosed invention: **Giuliani et al. (US 5,784,742) and Puskas (US 6,002,195)**.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to STEPHANIE NEWTON whose telephone number is (571)270-1662. The examiner can normally be reached on Monday- Friday 7:30a-5p est.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Monica Carter can be reached on (571) 272- 4475. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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